(No Model.)

H. G. SHEPARD.

WOODEN WHEEL RIM.

No. 564,802. Patented July 28, 1896.

Fig. 1

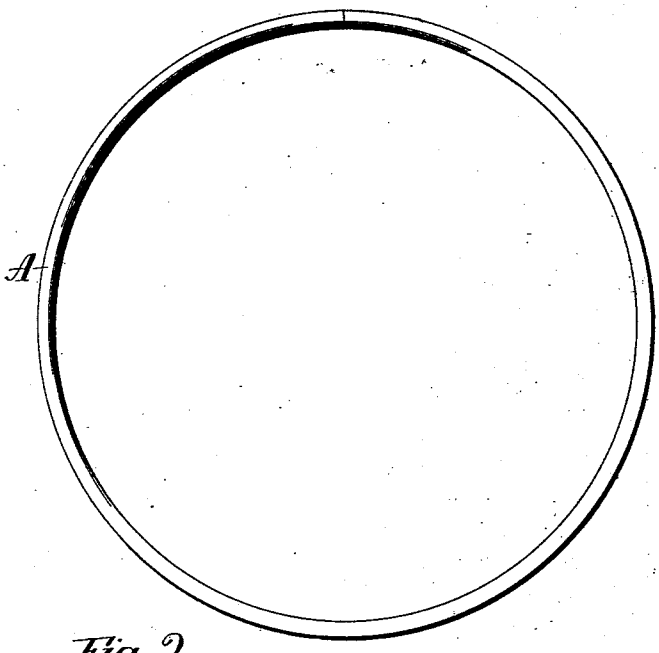


Fig. 2

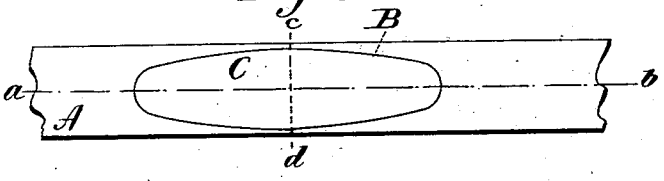


Fig. 4

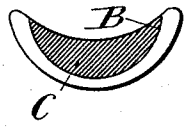
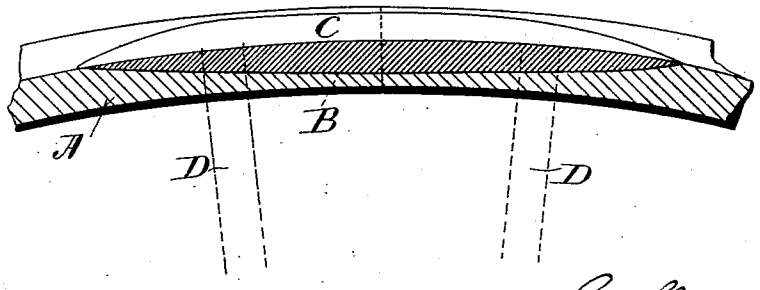


Fig. 3



Witnesses.
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Lillian D. Kelsey

Harvey G. Shepard.
Inventor.
By Attys.
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UNITED STATES PATENT OFFICE.

HARVEY G. SHEPARD, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO H. G. SHEPARD & SONS, OF SAME PLACE.

WOODEN WHEEL-RIM.

SPECIFICATION forming part of Letters Patent No. 564,802, dated July 28, 1896.

Application filed January 24, 1894. Serial No. 497,871. (No model.)

To all whom it may concern:

Be it known that I, HARVEY G. SHEPARD, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Wooden Wheel-Rims; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a wheel-rim constructed in accordance with my invention; Fig. 2, an enlarged broken plan view thereof; Fig. 3, a view of the rim in longitudinal section on the line *a b* of Fig. 2; Fig. 4, a view of the rim in transverse section on the line *c d* of the same figure.

My invention relates to an improvement in wooden rims for cycle-wheels, the object being to produce at a low cost for manufacture a light, simple, strong, and durable rim constructed with particular reference to taking the strain of the spokes and to resisting exposure to the weather.

With these ends in view my invention consists in a wooden wheel-rim having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention I employ a single long strip of wood A, such as hickory, ash, or elm, and of any desired cross-section, so long as it has its outer periphery concaved suitably to the reception of a tire. Its ends are formed squarely with reference to its length, so as to be abutted squarely together, or at a right angle to the length of the strip. The outer face of each end of the strip has a recess B formed in it, the recess of one end of the strip corresponding to the recess of the other end thereof and both recesses sinking below the concavity of the strip. As shown herein, these recesses are nearly as wide as the strips at their outer ends, but taper gradually in width and depth as they progress inward. They are designed to receive a supplemental binding-strip C, which is applied over the joint formed by the squarely-abutting ends of the rim-strip A and inserted into and secured in the said recesses, to which it conforms in shape, being thickest in its center and tapering gradually laterally and longitudinally therefrom. It is also made to conform to the curvature of the outer face of the rim-strip, so that the concavity of one is made coincident with that of the other. This binding-strip is secured in place by means of glue or other equivalent material, and also by two of the wheel-spokes D D, which are passed through it at points opposite of its longitudinal center, as indicated by broken lines in Fig. 3.

By abutting the ends of the rim-strips squarely together they effectively resist the strain of the spokes, whereas if the joint is formed by chamfering and lapping the ends of the rim-strip the tension of the spokes exerts a constant effort to cause the two chamfered ends to slide upon each other. Furthermore, the formation of a square joint reduces the opportunity of moisture to work into the joint from the exposed portion of the rim to the minimum, as a square joint makes the shortest line of union between the ends of the rim-strip that can be made. The main portion of the joint, which may be said to be around the edges of the supplemental binding-strip, is located entirely within the outer face of the rim, and when the same is in use will be concealed and protected by the tire; but independent of the glue or other material used in the formation of the joint the two spokes which pass through the binding-strip and through the abutting ends of the rim-strip coöperate therewith, so as to hold them all together firmly, even in the absence of glue or cement. I also wish to call attention to the fact that the supplemental binding-strip, being made of wood, yields or springs with the rim, and avoids the formation of a dead-point therein.

I do not of course limit myself to the application of my invention to rims of any particular form in transverse section, as that may be varied according to the dictates of circumstances. It is to be understood, however, that wheel-rims constructed in accordance with my invention will have concave outer peripheries for the reception of tires; nor do I limit myself to recessing the outer

faces of the ends of the rim-strip in any particular manner, nor to using a supplemental binding-strip of any particular form, for obviously the shape of the recesses and binding-strip may also be varied. I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention. I am aware, however, that it is old to squarely abut the ends of a wheel-felly and connect them by means of a metal binding-strip applied over the abutting ends of the felly, and secured thereto by inwardly-bent retaining-points located at its ends, and I do not claim that construction broadly; nor do I broadly claim a wooden wheel-rim concaved to receive a tire. Neither do I broadly claim a joint formed by scarfing and abutting two ends and binding them together by means of a short piece of wood set into the space formed by scarfing them, for that is old in the art of woodworking. I am also aware that it is old to construct a suspension-wheel with a wooden rim, the ends of which are directly abutted and overlapped to form a joint.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A wheel-rim consisting of a circularly-bent wooden strip having its ends joined together and the concave tire-seat surface of its end portions grooved or recessed circumferentially, and a wooden lap-strip fitting into and cemented to the walls of the recessed ends of the rim-strip.

2. The herein-described wooden rim for bicycle-wheels, composed of a rim-strip and a short supplemental binding-strip, the said rim-strip consisting of a single strip of wood having its outer periphery grooved or concaved throughout its length to adapt it to receive a tire, and also having two recesses corresponding to each other, formed in the outer faces of its respective ends, sinking below its groove and deepest and widest at their outer ends and gradually tapering both in width and depth as they progress inward from the ends of the rim-strip, and the said binding-strip being concavo-convex in cross-section, tapering in thickness and width in each direction from its longitudinal center, set into the space formed by recessing the ends of the rim-strip as described, so that its concaved outer face coincides with the curvature of the groove in the rim-strip, secured in place throughout its length by an adhesive, and located entirely within the edges of the rim-strip, substantially as described, and whereby the said binding-strip being made of wood is elastic and springs with the rim-strip, and whereby, also, the joint formed by the binding-strip is protected from injury and moisture by the tire which is located in the groove of the rim-strip and covers the binding-strip.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HARVEY G. SHEPARD.

Witnesses:
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